

WHAT IS CLAIMED AS NEW AND DESIRED TO BE SECURED BY LETTERS
PATENT OF THE UNITED STATES IS:

5 1. A method of analyzing a medical image to arrive at information concerning a disease that may be evidenced by a lesion in the medical image, the method comprising:
 extracting at least one lesion feature from the medical image; and
 arriving at the information concerning the disease, based on non-parametric estimation of the distribution of the feature over the database.

10 2. The method of Claim 1, wherein the information comprises at least one from a group including:
 a decision on whether a lesion is present in the medical image;
 a characterization of a likelihood that the lesion is malignant;
 15 a characterization a stage of cancer of the lesion;
 a characterization of the lesion as being malignant or benign; and
 a characterization of a likelihood that a malignancy will develop in the future.

20 3. The method of Claim 1, wherein the risk feature extracting step comprises:
 analyzing a surrounding environment of the lesion.

25 4. The method of Claim 3, wherein the analyzing step comprises:
 assessing a parenchymal pattern surrounding the lesion in human breast tissue in a mammogram constituting the medical image.

30 5. The method of Claim 1, wherein the lesion feature extraction step comprises:
 determining at least one feature from a group of features comprising skewness of gray-values, spiculation, margin definition, shape, density, homogeneity, texture, asymmetry, and temporal stability.

6. A system implementing the method of Claims 1, 2, 3, 4 or 5.

7. A computer program product storing program instructions for execution on a computer system, which when executed by the computer system, cause the computer system to perform the method recited in any one of Claims 1, 2, 3, 4 or 5.